

value of the inductive element;

a control line operably connected to the ferro-electric material;

q1
a control source electrically connected to the control line, the control source configured to transmit a control signal on the control line;

wherein the ferro-electric material, responsive to the control signal, adjusts the value to change the impedance of the matching circuit.

- q2
2. (Amended Once) The communication device of claim 1, wherein the quality factor of the matching circuit, when operated in a temperature range between about -50 degrees Celsius and 100 degrees Celsius, is greater than about 80 in a frequency range between 0.25 GHz and 7.0 GHz.

12. (Amended Once) A communication device comprising:

a capacitive element and an inductive element arranged as a matching circuit, the matching circuit having an impedance;

a ferro-electric material positioned to adjust a value that is a member of the group consisting of a capacitance value of the capacitive element and an inductance value of the inductive element;

q3
a control line operably connected to the ferro-electric material;

a control source electrically connected to the control line, the control source configured to transmit a control signal on the control line;

wherein:

the ferro-electric material, responsive to the control signal, adjusts the value to change the impedance of the matching circuit, and the control signal comprises a direct current voltage;

the control source is coupled to a band select signal, the band select signal comprising a signal identifying a band in which the matching circuit is to operate; and

the control source comprises:

93 a lookup table comprising a number representing the direct current voltage value corresponding to the band in which the matching circuit is to operate; and

a voltage source for generating the direct current voltage responsive to the number representing the direct current voltage value.

13. (Amended Once) A communication device comprising:

a capacitive element and an inductive element arranged as a matching circuit, the matching circuit having an impedance;

a ferro-electric material positioned to adjust a value that is a member of the group consisting of a capacitance value of the capacitive element and an inductance value of the inductive element;

94 a control line operably connected to the ferro-electric material;

a control source electrically connected to the control line, the control source configured to transmit a control signal on the control line;

wherein the ferro-electric material, responsive to the control signal, adjusts the value to change the impedance of the matching circuit, and

wherein the control source comprises a power detector which detects a power level of an RF signal and varies the control signal responsive to the power level of the RF signal.

24. (Amended Once) A communication device comprising:

95 a capacitive element and an inductive element arranged as a matching circuit, the matching circuit having an impedance;

a ferro-electric material positioned to adjust a value that is a member of the group consisting of a capacitance value of the capacitive element and an inductance value of the inductive element;

a control line operably connected to the ferro-electric material;

95 a control source electrically connected to the control line, the control source configured to transmit a control signal on the control line;

an antenna coupled to a first port of the matching circuit; and

a duplexer coupled to a second port of the matching circuit, and

wherein the ferro-electric material, responsive to the control signal, adjusts the value to change the impedance of the matching circuit.

25. (Amended Once) A communication device comprising:

a capacitive element and an inductive element arranged as a matching circuit, the matching circuit having an impedance;

96 a ferro-electric material positioned to adjust a value that is a member of the group consisting of a capacitance value of the capacitive element and an inductance value of the inductive element;

a control line operably connected to the ferro-electric material;

a control source electrically connected to the control line, the control source configured to transmit a control signal on the control line;

an antenna coupled to a first port of the matching circuit; and

a duplexer coupled to a second port of the matching circuit, and

wherein the ferro-electric material, responsive to the control signal, adjusts the value to change the impedance of the matching circuit.